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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,656

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Markus Allmendinger

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EXAMINER

VO, HAI

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,656	Applicant(s) ALLMENDINGER ET AL.	
	Examiner Hai Vo	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-20 is/are pending in the application.
- 4a) Of the above claim(s) 17-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-16 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/21/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 10-16 and 20 in the reply filed on 03/07/2008 is acknowledged. The traversal is on the ground(s) that the inventions are not independent. This is not found persuasive because the inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Claim 10 is anticipated or obvious over US 2005/0176833 (see rejections below). As the recited structure does not make a contribution over the prior art, unity of invention is lacking and restriction is appropriate.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 10, 13 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Tay (US 2005/0176833). Tay discloses an insulation material comprising a foam core disposed between two metal plates (paragraph 98). The foam core comprises plurality of foam particles, each having the surface coated with a fire

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retardant material as shown in figures 3 and 5. The foam core is made from polystyrene foam, polyisocyanurate foam (paragraphs 110 and 110). The fire retardant coating includes hydrated sodium silicate (paragraph 43). Accordingly, Tay anticipates the claimed subject matter.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tay (US 2005/0176833) in view of Ingram (US 4,035,315). Tay does not specifically disclose a density of the foam core. Ingram discloses a fire-resistant, thermally insulating foam comprising molded polystyrene foam having a density of 2.0 pcf coated with an intumescent paint (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the foam core having a density as taught by Ingram motivated by the desire to provide a light weight insulating material. Tay disc

6. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tay (US 2005/0176833) as applied to claim 10 above, further in view of Fujita et al (US 4,405,682). Tay discloses that "the coating of the fire resistant material applied to the particles at a thickness corresponding to the degree of fire

resistance that is desired.” Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the intumescent material on the foam particles at a thickness in the range instantly claimed because such a variable would have been recognized by one skilled in the art as dependent upon the degree of fire resistance that is desired. That is in line with *In re Aller*, 105 USPQ 233 which holds that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Tay does not specifically disclose the thicknesses of the foam core, and metal plate. Fujita discloses a fire-resistant, thermally insulating board as a building material comprising two steel plates with a foam core wherein an intumescent fire retardant composition is disposed between the foam core and at least one of the metal sheets (abstract, figure 1). Fujita discloses the foam having a thickness ranging from 10 to 200 mm (column 6, lines 10-16) and the steel plate which is about 0.05 to 10 mm thick (column 2, lines 10-15).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the foam core and the metal plate with the thicknesses as taught by Fujita because such are typical thicknesses of the foam layer and metal facing widely used in the fire resistant, thermally insulating board.

7. Claims 10-16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al (US 4,405,682) in view of EP 0 891 860. Fujita discloses a fire-

resistant, thermally insulating board as a building material comprising two steel plates with a foam core wherein an intumescent fire retardant composition is disposed between the foam core and at least one of the metal sheets (abstract, figure 1). The intumescent fire retardant composition is made from sodium silicate (column 3, lines 10-15). Fujita discloses the foam having a density from 0.02 to 0.2 g/cm³ and a thickness ranging from 10 to 200 mm (column 6, lines 10-16). The steel plate is about 0.05 to 10 mm thick (column 2, lines 10-15). Fujita does not specifically disclose the foam core made from a polystyrene foam. EP'860 discloses a fire and heat resistant structure for cold-store buildings comprising two metal sheets with a foam core wherein an intumescent fire retardant mat is disposed between the foam core and at least one of the metal sheets (page 2, column 2, lines 1-15). EP'860 discloses the foam core being a polyisocyanurate foam or polystyrene foam (page 2, column 2, lines 1-5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the polyisocyanurate foam with a polystyrene foam because two materials have been shown in the art to be recognized equivalent foam cores for the fire resistant, thermal insulating boards.

Fujita does not specifically disclose a thickness of the fire retardant intumescent composition. EP'860 teaches a fire retardant composite panel wherein the intumescent coating has a thickness ranging from 1 mm to 3 mm (page 2, column 2, lines 5-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the

intumescent coating having a thickness as taught by EP'860 from the standpoints of weight reduction.

8. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al (US 4,405,682) in view of EP 0 891 860 as applied to claim 10 above, further in view of Batdorf (US 5,786,095). Fujita does not specifically disclose a thickness of the fire retardant intumescent composition. Batdorf, however, disclose an intumescent based thermal barrier system comprising a silicate solution, an expandable microsphere intumescent agent and a frit material (abstract). Batdorf discloses the intumescent based thermal barrier coating having a thickness of 0.3 mm (column 6, lines 18-20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the intumescent coating having a thickness as taught by Batdorf from the standpoints of weight reduction.
9. Claims 10-14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al (US 4,405,682) in view of Spicuzza, Jr. et al (US 4,168,347). Fujita discloses a fire-resistant, thermally insulating board as a building material comprising two steel plates with a foam core wherein an intumescent fire retardant composition is disposed between the foam core and at least one of the metal sheets (abstract, figure 1). The intumescent fire retardant composition is made from sodium silicate (column 3, lines 10-15). Fujita discloses the foam having a density from 0.02 to 0.2 g/cm³ and a thickness ranging from 10 to 200 mm (column 6, lines 10-16). The steel plate is about 0.05 to 10 mm thick

(column 2, lines 10-15). Fujita does not specifically disclose the foam core made from a polystyrene foam. Spicuzza discloses a fire and heat resistant structure comprising two metal sheets with a polystyrene foam core wherein an intumescent fire retardant mat is disposed between the foam core and at least one of the metal sheets (example 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the polyisocyanurate foam with a polystyrene foam because two materials have been shown in the art to be recognized equivalent foam cores for the fire resistant, thermal insulating boards.

10. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al (US 4,405,682) in view of Spicuzza, Jr. et al (US 4,168,347) as applied to claim 10 above, further in view of Batdorf (US 5,786,095). Fujita does not specifically disclose a thickness of the fire retardant intumescent composition. Batdorf, however, discloses an intumescent based thermal barrier system comprising a silicate solution, an expandable microsphere intumescent agent and a frit material (abstract). Batdorf discloses the intumescent based thermal barrier coating having a thickness of 0.3 mm (column 6, lines 18-20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the intumescent coating having a thickness as taught by Batdorf from the standpoints of weight reduction.

11. Claims 10, 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 4,015,386) in view of EP 0 891 860. Cook discloses a fire-

resistant door comprising two steel plates with a foam core wherein an intumescent fire retardant composition is disposed between the foam core and at least one of the metal sheets (abstract, figure 2). The intumescent fire retardant composition is made from sodium silicate (abstract). Cook does not specifically disclose the foam core made from a polystyrene foam. EP'860 discloses a fire and heat resistant structure comprising two metal sheets with a foam core wherein an intumescent fire retardant mat is disposed between the foam core and at least one of the metal sheets (page 2, column 2, lines 1-15). EP'860 discloses the foam core being a polyisocyanurate foam or polystyrene foam (page 2, column 2, lines 1-5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the polyisocyanurate foam with a polystyrene foam because two materials have been shown in the art to be recognized equivalent foam cores for the fire resistant, thermal insulating boards.

12. Claims 11, 12, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 4,015,386) in view of EP 0 891 860 as applied to claim 10 above, further in view of Fujita et al (US 4,405,682). Cook does not specifically disclose a thickness of the fire retardant intumescent composition. EP'860 teaches a fire retardant composite panel wherein the intumescent coating has a thickness ranging from 1 mm to 3 mm (page 2, column 2, lines 5-10). Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to use the intumescent coating having a thickness as taught by EP'860 from the standpoints of weight reduction.

Cook does not specifically teach the thicknesses of the foam core and the metal plate. Fujita discloses a fire-resistant, thermally insulating board comprising two steel plates with a foam core wherein an intumescent fire retardant composition is disposed between the foam core and at least one of the metal sheets (abstract, figure 1). Fujita discloses the foam having a thickness ranging from 10 to 200 mm (column 6, lines 10-16) and the steel plate which is about 0.05 to 10 mm thick (column 2, lines 10-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the foam core and the metal plate with the thicknesses as taught by Fujita because such are typical thicknesses of the foam layer and metal facing widely used in the fire resistant, thermally insulating board.

Cook does not specifically disclose a density of the foam layer. Fujita discloses the foam having a density from 0.02 to 0.2 g/cm³. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the foam layer having a density as taught by Fujita from the viewpoints of lightweightness.

13. Claims 10-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook (US 4,015,386) in view of Vonken et al (US 5,470,888). Cook discloses a fire-resistant door comprising two steel plates with a foam core wherein an intumescent fire retardant composition is disposed between the foam

core and at least one of the metal sheets (abstract, figure 2). The intumescent fire retardant composition is made from sodium silicate (abstract). Cook does not specifically disclose the foam core made from a polystyrene foam. Vonken discloses a fire and heat resistant structure comprising a polystyrene foam having a density ranging from 30-40 g/l (column 4, lines 34-35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the polyurethane foam with a polystyrene foam because two materials have been shown in the art to be recognized equivalent foam cores for the fire resistant, thermal insulating boards.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hai Vo/
Hai Vo
Primary Examiner, Art Unit 1794